

**45-DAY EXPRESS TERMS
FOR
PROPOSED BUILDING STANDARDS
OF THE
DEPARTMENT OF WATER RESOURCES

REGARDING PROPOSED CHANGES TO
2016 CALIFORNIA PLUMBING CODE
CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 5

(DWR 01/16)**

The Department of Water Resources (DWR) proposes to make necessary changes to be included into the 2016 edition of the California Plumbing Code (CPC) as presented on the following pages, including any necessary amendments.

LEGEND FOR EXPRESS TERMS:

1. **Vertical Bar:** Modifications to the current adopted CPC. Any changes to the current (2016) CPC will have a vertical bar in the left margin. See 2, 3, and 6 which have amendments to the California code.
 - Note a new adoption for DWR which is part of the UPC but not part of the CPC adopted by another agency is a modification to the CPC code and would have a vertical bar.
 - Note a new adoption for DWR which is part of the CPC adopted by another agency is not a modification to the CPC and would not have a vertical bar.
 2. **UPC language with new California amendments:** UPC language shown in normal Arial 9 point; California amendments to UPC text shown underlined and in italics with vertical bar in left margin.
 3. **Existing California amendments being modified:** All such existing language shown in *italics*, modified language is underlined or shown in ~~strikeout~~ with vertical bar in left margin.
 4. **Existing California amendments with no modification:** All such existing language shown in *italics*, modified model code language is shown in ~~strikeout~~.
 5. **Text not being modified:** All language not displayed in full is shown as “...” (i.e., ellipsis).
 6. **Repealed text:** All language shown in ~~strikeout~~ with vertical bar in left margin.
 7. **Notation:** Authority and Reference citations are provided at the end of each action.
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DWR intends to redesignate the sections of Chapter 16A, Part II (DWR) of the 2016 California Plumbing Code (CPC) as sections of Chapter 15 of the CPC to accommodate the organizational restructuring in the Code that occurred since Chapter 16A was first codified. DWR also intends to substantively amend certain sections of the CPC, including parts of chapters 2, 6, 15, and 16, as more specifically described in the following sections.

1. DWR proposes to adopt the following sections of Chapter 2 of the CPC as follows:

**CHAPTER 2
DEFINITIONS**

206.0

Disinfected Tertiary Recycled Water. *Filtered and subsequently disinfected wastewater that meets the approved method of treatment and minimum level of water quality specified in California Code of Regulations, Title 22, Division 4, Chapter 3 for the purpose of direct beneficial use.*

220.0

Reclaimed (Recycled) Water. *(DWR/HCD 1) Nonpotable water that meets California Department of Public Health State Water Resources Control Board statewide uniform criteria for disinfected tertiary recycled water. Reclaimed (recycled) water is also known as "recycled water" or "reclaimed water".*

Recycled Water Supply System. *The building supply pipe, the water distribution pipes, and the necessary connecting pipes, fittings, control valves, backflow prevention devices, and all appurtenances carrying or supplying reclaimed (recycled) water in or adjacent to the building or within the premises.*

Authority: Water Code Section: 13557.

Reference(s): Water Code Sections: 13557.

2. DWR proposes to adopt the following sections of Chapter 6 of the CPC as follows:

**CHAPTER 6
WATER SUPPLY AND DISTRIBUTION**

601.2 Hot and Cold Water Required. Except where not deemed necessary for safety or sanitation by the Authority Having Jurisdiction, each plumbing fixture shall be provided with an adequate supply of potable running water piped thereto in an approved manner, so arranged as to flush and keep it in a clean and sanitary condition without danger of backflow or cross-connection. Water closets and urinals shall be flushed by means of an approved flush tank or flushometer valve.

Exceptions:

1. Listed fixtures that do not require water for their operation and are not connected to the water supply.
2. ***(HCD 1 & HCD 2)*** For limited-density owner-built rural dwellings, potable water shall be available to the dwelling site, although such water need not be pressurized. Where water is not piped from a well, spring, cistern or other source, there shall be a minimum reserve of 50 gallons (189 L) of potable water available. Where water delivery is pressurized, piping shall be installed in accordance with the provisions of this chapter.
3. ~~***(HCD 1 & HCD 2)***~~ Recycled water may be allowed as specified in Chapter 16A Part II, and on-site treated nonpotable gray water as specified in Chapter 15, Section 1504 of this code.
(DWR) For all residential buildings, alternate water sources may be allowed as specified in Chapter 15 of this code in addition to potable water.
4. ***(DWR)*** For non-residential buildings, alternate water sources may be allowed as specified in Chapter 15 of this code.
- 5.4-~~***(DWR)***~~ Where a public agency requires a building to use recycled water to flush water closets and urinals in accordance with California Water Code 13554.

In occupancies where plumbing fixtures are installed for private use, hot water shall be required for bathing, washing, laundry, cooking purposes, dishwashing or maintenance. In occupancies where plumbing fixtures are installed for public use, hot water shall be required for bathing and washing purposes. This requirement shall not supersede the requirements for individual temperature control limitations for public lavatories and public and private bidets, bathtubs, whirlpool bathtubs, and shower control valves.

601.3.3 Alternate Water Sources. Alternate water source systems, except for recycled water supply systems, shall have a purple (Pantone color No. 512, 522C, or equivalent) background with uppercase lettering and shall be field or factory-marked as follows:

- (1) Gray water systems shall be marked in accordance with this section with the words "CAUTION: NONPOTABLE GRAY WATER, DO NOT DRINK" in black letters.
- ~~(2) Reclaimed (recycled) water systems shall be marked in accordance with this section with the words: "CAUTION: NONPOTABLE RECLAIMED (RECYCLED) WATER, DO NOT DRINK" in black letters.~~
- ~~(3)~~(2) On-site treated water systems shall be marked in accordance with this section with the words: "CAUTION: ON-SITE TREATED NONPOTABLE WATER, DO NOT DRINK" in black letters.
- ~~(4)~~(3) Rainwater catchment systems shall be marked in accordance with this section with the words: "CAUTION: NONPOTABLE RAINWATER WATER, DO NOT DRINK" in black letters.

(DWR) For recycled water supply systems, the provisions of Section 1503.7 shall apply.

Authority: Water Code Section: 13557.

Reference(s): Water Code Sections: 13554.

3. DWR proposes to adopt sections 1501 and 1502 of Chapter 15 of the CPC as follows:

CHAPTER 15
§§1501 and 1502
ALTERNATIVE WATER SOURCES FOR NONPOTABLE APPLICATIONS

Intent

The provisions of this chapter are intended to:

1. *Conserve potable water by facilitating greater reuse of laundry, shower, lavatory and similar sources of water discharge, or by the use of alternate water sources, where available, for irrigation and/or indoor use.*
2. *Reduce the number of non-compliant gray water systems by making legal compliance easily achievable.*
3. *Provide guidance for avoiding potentially unhealthful conditions.*
4. *Provide an alternative way to relieve stress on a private sewage disposal system by diverting the graywater.*

1501.0 General

1501.1 Applicability. ~~(HCD 1) Except as otherwise provided for in this chapter, the provisions of this code shall be applicable to alternate water source system installation. (BSC & HCD 1)~~ The provisions of this chapter shall apply to the construction, alteration, discharge, use and repair of alternate water source systems for nonpotable applications.

1501.1.1 Allowable Use of Alternate Water. Where approved or required by the Authority Having Jurisdiction, alternate water sources [reclaimed (recycled) water, gray water, and on-site treated nonpotable gray water] shall be permitted to be used in lieu of potable water for the applications identified in this chapter.

1501.2 System Design. Alternate water source systems shall be designed in accordance with this chapter by a registered design professional or who demonstrates competency to design the alternate water source system as required by the Authority Having Jurisdiction. Components, piping, and fittings used in any alternate water source system shall be listed.

1501.3 Permit. It shall be unlawful for a person to construct, install, alter, or cause to be constructed, installed, or altered an alternate water source system in a building or on a its premises without first obtaining a permit to do such work ~~from the Authority Having Jurisdiction. Prior to commencing the issuance of permits for indoor gray water systems pursuant to state requirements relating to gray water, a city, county, city and county or other local agency shall seek consultation with the local public health department to ensure that local public health concerns are addressed in local standards or ordinances, or in issuing permits. See California Water Code Section 14877.3 for gray water systems.~~

No changes or connections shall be made to either the alternate water source system or the potable water system within a site containing an alternate water source system without approval by the Authority Having Jurisdiction.

1501.4 Component identification. System components shall be properly identified as to the manufacturer.

1501.5 Maintenance and Inspection. Alternate water source systems and components shall be inspected and maintained in accordance with ~~the manufacturer's recommendations and/or as required by the Enforcing Agency~~ Authority Having Jurisdiction.

~~(BSC, HCD 1) Where no manufacturer's recommendations exist, additional recommendations are listed in Table 1501.5.~~

Exception: (DWR) Recycled water supply systems shall comply with Section 1503.15.

1501.5.1 Maintenance Responsibility. The required maintenance and inspection of alternate source systems shall be the responsibility of the property owner, unless otherwise required by the Authority Having Jurisdiction.

1501.6 Operation and Maintenance Manual. An operation and maintenance manual for gray water, ~~and~~ on-site treated nonpotable gray water, and recycled water supply systems required to have a permit in accordance with Sections 1501.3, 1503.2 and 1504.2 shall be supplied to the building owner by the system designer or installer. The operating and maintenance manual shall include the following:

- (1) *Diagram(s) of the entire system and the location of system components.*

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- (2) Instructions on operating and maintaining the system.
- (3) *Instructions on maintaining the required water quality for on-site treated nonpotable water systems.*
- (4) Details on *startup, shutdown, and* deactivating the system for maintenance, repair, or other purposes.
- (5) Applicable testing, inspection, and maintenance frequencies in accordance with *Section 1501.5 or Section 1503.15 as applicable.*
- (6) A method of contacting the *installer and/or* manufacturer(s).
- (7) *Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure.*

1501.7 Minimum Water Quality Requirements. The minimum water quality for alternate water source systems shall meet the applicable water quality requirements for the intended application as determined by the Authority Having Jurisdiction. ~~In the absence of water quality requirements for on-site treated nonpotable gray water systems, the requirements of NSF 350 shall apply.~~ Water quality requirements for on-site treated nonpotable graywater shall comply with Section 1504.10.2. Recycled water shall comply with the water quality requirements of Section 1503.14.

Exception: Water treatment is not required for gray water used *in a disposal field or for subsurface or subsoil irrigation.*

1501.8 Material Compatibility. Alternate water source systems shall be constructed of materials that are compatible with the type of pipe and fitting materials, water treatment, and water conditions in the system.

1501.9 System Controls. Controls for pumps, valves, and other devices that contain mercury that come in contact with alternate water source water supply shall not be permitted.

1501.10 Signage

For the purposes of on-site treated nonpotable gray water Sections 1501.10.1 and 1501.10.2 shall apply.
For the purposes of reclaimed (recycled) water Section 1503.12 shall apply.

1501.10.1 Commercial, Industrial, Institutional, and Residential Restroom Signs. A sign shall be installed in restrooms in commercial, industrial, and institutional occupancies, ~~and shall also be installed in residential common use areas restrooms~~ using reclaimed (recycled) water and on-site treated nonpotable gray water for water closets, urinals, or both. Signs shall comply with all applicable requirements of the California Building Code. Each sign shall contain the following text:

TO CONSERVE WATER, THIS BUILDING USES *_____* ~~ON-SITE TREATED NONPOTABLE GRAY WATER GRAYWATER~~ TO FLUSH TOILETS AND URINALS.

1501.10.2 Equipment Room Signs. Each room containing ~~reclaimed (recycled) water and~~ on-site treated nonpotable gray water equipment shall have a sign posted in a location that is visible to anyone working on or near nonpotable gray water equipment with the following wording in 1 inch (25.4 mm) letters:

CAUTION: ~~NONPOTABLE~~ *_____* ~~ON-SITE TREATED NONPOTABLE GRAYWATER~~, DO NOT DRINK.
DO NOT CONNECT TO DRINKING WATER SYSTEM. NOTICE: CONTACT BUILDING MANAGEMENT
BEFORE PERFORMING ANY WORK ON THIS WATER SYSTEM.

_____ Shall indicate ~~RECLAIMED (RECYCLED) WATER or ON-SITE TREATED GRAY WATER~~ accordingly.

1501.11 Inspection and Testing. Alternate water source systems shall be inspected and tested in accordance with Section 1501.11.1 and Section 1501.11.2, *and/or as required by the Authority Having Jurisdiction.*

Exception: (DWR) Recycled water supply systems shall comply with Section 1503.13.

1501.13 Abandonment. Alternate water source systems that are no longer in use or fail to be maintained in accordance with Section 1501.5 shall be abandoned. Abandonment shall comply with Section 1501.13.1 and Section 1501.13.2.

1501.13.1 General. An abandoned system or part thereof covered under the scope of this chapter shall be disconnected from remaining systems, drained, plugged, and capped in an approved manner.

1501.13.2 Underground Tank. An underground water storage tank that has been abandoned or otherwise

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discontinued from use in a system covered under the scope of this chapter shall be completely drained and filled with earth, sand, gravel, concrete, or other approved material or removed in a manner satisfactory to the Authority Having Jurisdiction.

1501.14 Sizing. Unless otherwise provided for in this chapter, alternate water source piping shall be sized in accordance with Chapter 6 for sizing potable water piping.

1502.0 Gray Water Systems.

1502.3 Connections to Potable and Reclaimed (Recycled) Water Supply Systems. Gray water systems shall have no ~~unprotected direct~~ connection to a potable water supply, on-site treated nonpotable graywater supply, or ~~reclaimed (recycled) water~~ supply systems.

Exceptions:

- (1) Potable water, on-site treated nonpotable graywater, reclaimed (recycled) water, *or rainwater* is permitted to be used as makeup water for a non-pressurized ~~storage tank~~ nonpotable graywater storage tank provided the connection is protected by an air gap, ~~reduced-pressure principal backflow preventer, or other physical device which prevents backflow~~ in accordance with this code.
- (2) A potable water supply may be connected temporarily for initial testing of the untreated graywater system as provided in Section 1501.11.2.2.

Authority: Water Code Section: 13557.

Reference(s): Water Code Sections: 13557.

4. DWR proposes to adopt sections 1503 and 1504 of Chapter 15 of the CPC as follows:

**CHAPTER 15
§§1503 and 1504**

ALTERNATIVE WATER SOURCES FOR NONPOTABLE APPLICATIONS

1503.0 Reclaimed (Recycled) Water Supply Systems for Buildings.

1503.1 General. The provisions of ~~this section~~ Sections 1503.0 through 1503.15.1 shall apply to safely plumb buildings with both potable and recycled water supply systems. Unless otherwise specified in this code, the general provisions applying to alternate water systems pursuant to Section 1501.0 through 1501.14 shall apply to recycled water supply systems. The provisions in this section encompass the installation, construction, alteration, and repair of ~~reclaimed (recycled) water supply systems receiving reclaimed (recycled) water from a water/wastewater utility. Allowed intended to supply uses include such as~~ water closets, urinals, trap primers for floor drains and floor sinks, ~~aboveground and subsurface irrigation, industrial or commercial cooling or air conditioning and other uses as generally allowed in paragraph (1) and specifically allowed in paragraph (2) below.~~ approved by the Authority Having Jurisdiction.

- (1) Recycled water uses that are generally allowed are specified in the California Code of Regulations, Title 22, Division 4, Chapter 3.
- (2) Recycled water uses that are allowed from any particular wastewater treatment facility are specified in the permit for recycled water issued by the State Water Resources Control Board or Regional Water Quality Control Board.

1503.1.1 Toilet and Urinal Flushing. In accordance with Water Code Section 13553, reclaimed (recycled) water is allowed for toilet and urinal flushing in certain structures. These structures include commercial, retail and office buildings, theaters, auditoriums, condominium projects, schools, hotels, apartments, barracks, dormitories, jails, prisons, reformatories, and other structures as determined by the State Water Resources Control Board.

1503.2 Permit. It shall be unlawful for a person to construct, install, alter, or cause to be constructed, installed, or altered a ~~reclaimed (recycled) water supply~~ system within a building or on ~~a~~-its premises without first obtaining a permit to do such work from the Authority Having Jurisdiction.

Prior to commencing the issuance of permits for recycled water supply systems pursuant to state requirements relating to recycled water, a city, county, city and county or other local agency shall seek consultation with the State Water Resources Control Board, local public health department and local recycled water purveyor to ensure that state and local public health concerns are addressed in local standards or ordinances, or in issuing permits.

1503.2.1 Plumbing Plan Submission. No permit for a ~~reclaimed (recycled) water supply~~ system shall be issued until complete plumbing plans, with data satisfactory to the Authority Having Jurisdiction, have been submitted and approved.

1503.3 System Changes. No changes or connections shall be made to either the ~~reclaimed (recycled) water supply~~ system or the potable water system within a site containing a ~~reclaimed (recycled) water supply~~ system without approval by the Authority Having Jurisdiction.

1503.4 Connections to Potable or Reclaimed (Recycled) Water Supply Systems. ~~Reclaimed (Recycled) water supply~~ systems shall have no direct connection to a potable water supply or alternate water source system.

Exceptions:

- (1) Potable water is permitted to be used as makeup water for a reclaimed (recycled) water storage tank provided the potable water supply inlet is protected by an air gap ~~or reduced-pressure principle backflow preventer~~ in accordance with this code.
- (2) A potable water supply may be connected temporarily for initial testing of the recycled water supply system as provided in Section 1503.13.2.2.
- (3) Reclaimed (recycled) water is permitted to be used as makeup water for an alternate water source system provided the recycled water supply system is protected by an air gap in accordance with this code.

1503.5 Initial Cross-Connection Test. A cross-connection test is required in accordance with Section 1503.13.2.2 ~~1504.14.2~~. Before the building is occupied or the system is activated, the installer shall perform ~~the~~an initial cross-connection test in the presence of the Authority Having Jurisdiction ~~and~~ or other authorities having jurisdiction. The test shall be ruled successful by the Authority Having Jurisdiction before final approval is granted.

1503.6 Reclaimed (Recycled) Water Supply System Materials. ~~Reclaimed (recycled) water supply and distribution system materials shall comply with the requirements of this code for potable water supply and distribution systems, unless otherwise provided for in this section.~~

1503.7 Reclaimed (Recycled) Water Supply System Color and Marking Information. *All mechanical equipment, including control valves, appurtenant to recycled water supply systems shall be painted purple or composed of purple material matching Pantone color No. 512, 522C or equivalent. Reclaimed (recycled) water systems Recycled water supply systems shall have a colored background and marking information in accordance with Section 601.3 of this code be identified and permanently marked with clearly visible black uppercase lettering on purple background. The identification may be accomplished by labeling metallic and non-metallic piping using purple-colored (Pantone color No. 512) adhesive Mylar PVC tape affixed along the entire length of the pipe, or using non-metallic pipe manufactured with purple (Pantone color No. 512, 522C, or equivalent) integral to the material. For either material, the tape or pipe shall be installed so the wording is clearly visible and shall be field or factory marked as follows:*

"CAUTION: NONPOTABLE RECYCLED WATER, DO NOT DRINK".

1503.8 Valves. Valves, except fixture supply control valves, shall be equipped with a locking feature.

1503.8.1 Valve Seals. *The master reclaimed (recycled) water shut-off valve and/or the reclaimed (recycled) water meter curb cock and each valve within a wall shall be sealed after the recycled water supply system has been approved and placed into operation. These seals shall be either crimped lead wire seal or plastic break away seal which, if broken after system approval, shall be deemed conclusive evidence that the recycled water supply system has been accessed. The seals shall be purple, numbered, and contain the words "RECYCLED WATER", and shall be supplied by the recycled water purveyor, or by other arrangements acceptable to the Authority Having Jurisdiction.*

1503.8.2 Valve and Appurtenance Access Door Signs. *Each reclaimed (recycled) water valve within a wall shall have its access door into the wall equipped with a warning sign approximately six (6) inches by six (6) inches (152 mm x 152 mm) with wording in approximately 3/8 inch (9.5 mm) letters on a purple background. The wording text and format of the sign shall be substantially the same as that specified in Section 1503.12.3. The signs shall be attached inside the access door frame and shall hang in the center of the access door frame. This sign requirement shall be applicable to any and all access doors, hatches, etc., leading to reclaimed (recycled) water piping and appurtenances.*

1503.9 Hose Bibbs. Hose bibbs shall not be allowed on reclaimed (recycled) water piping systems ~~located in areas accessible to the public. Access to reclaimed (recycled) water at points in the system accessible to the public shall be through a quick-disconnect device. Only quick couplers~~ that differs from those installed on the potable water system ~~shall be used on the recycled water piping system in areas subject to public access. Hose bibbs Quick couplers~~ supplying reclaimed (recycled) water shall be marked with the words: "CAUTION: NONPOTABLE RECLAIMED RECYCLED WATER, DO NOT DRINK," and the symbol in Figure 1503.9.

Exception:

In accordance with Health and Safety Code Section 8117 and 8118, hose bibbs are approved for use in cemeteries supplied with reclaimed (recycled) water. A hose bibb in an area subject to access by the general public shall be equipped with a sign marked "CAUTION: NONPOTABLE RECYCLED WATER, DO NOT DRINK," and the symbol in Figure 1503.9.



FIGURE 1503.9

1503.10 Required Appurtenances. The ~~reclaimed (recycled)~~ water supply system and the potable water system within the building and the premises shall be provided with the required appurtenances (e.g., valves, air/vacuum relief valves, etc.) to allow for ~~deactivation or drainage~~ testing as required for a cross-connection test in accordance with Section 1503.13.2.

1503.11 ~~Same-Pipe Separation in Trenches as Potable Water Pipes~~. Reclaimed (recycled) water pipes shall be permitted to be run or laid in the same trench as potable water pipes with 12 inches (305 mm) minimum vertical and horizontal separation where both pipe materials are approved for use within a building. Where piping materials do not meet this requirement the minimum horizontal separation shall be increased to ~~60~~ 48 inches (~~1524~~ 1220 mm). The potable water piping shall be installed at an elevation above the reclaimed (recycled) water piping. Reclaimed (recycled) water pipes laid in the same trench or crossing building sewer or drainage piping shall be installed in accordance with ~~this code for potable water piping~~ Sections 609.0 and 720.0 of this code for water pipes.

1503.12 ~~Signs~~ Signage. Signs in rooms and water closet tanks in buildings using reclaimed (recycled) water shall be in accordance with ~~Section 1504.10 and Section 1504.10.4~~ 1503.12.1, 1503.12.2, and 1503.12.3. Signs on access doors to valves and appurtenances shall be in accordance with Section 1503.8.2.

1503.12.1 Commercial, Industrial, Institutional, and Residential Restroom Signs. A sign shall be installed in each restroom of commercial, industrial, and institutional occupancies, and in residential common use areas using reclaimed (recycled) water for water closets, urinals, or both. Each sign shall contain letters of a highly visible color on a contrasting background with a character height as specified in the California Building Code (California Code of Regulations, Title 24, Part 2), Section 1143A.5 and Section 11B-703.5. The location of the sign(s) shall be such that the sign(s) are visible to users and shall be approved by the Authority Having Jurisdiction. The sign(s) shall contain the following text:

TO CONSERVE WATER, THIS BUILDING USES RECYCLED WATER TO FLUSH TOILETS AND URINALS.

1503.12.2 Tank-Type Toilet Signs. Where tank-type toilets (water closets) are flushed with recycled water, a permanent sign (such as plastic or stainless steel) shall be installed inside the tank to warn that the water within the tank is not a suitable emergency drinking water supply. The sign shall be labeled: "CAUTION: NONPOTABLE RECYCLED WATER – DO NOT DRINK."

1503.12.3 Equipment Room Signs. Each room containing reclaimed (recycled) water equipment shall have a sign posted in a location that is visible to anyone working on or near reclaimed (recycled) water equipment with the following wording in 1 inch (25.4 mm) letters on a purple background:

CAUTION: NONPOTABLE RECYCLED WATER. DO NOT DRINK. DO NOT CONNECT TO DRINKING WATER SYSTEM. NOTICE: CONTACT BUILDING MANAGEMENT BEFORE PERFORMING ANY WORK ON THIS WATER SYSTEM.

1503.13 Inspection and Testing. ~~Reclaimed (recycled)~~ water supply systems shall be inspected and tested in accordance with ~~Section 1504.14~~ 1503.13.1 and Section 1503.13.2. The reclaimed (recycled) water purveyor or other designated appointee may substitute for the Authority Having Jurisdiction for the purpose of inspections and tests pursuant to this section.

1503.13.1 Supply System Inspection and Test. Recycled water supply systems shall be inspected and tested in accordance with this code for testing of potable water piping.

1503.13.2 Cross-Connection Inspection and Testing. An initial inspection and test shall be performed on both the potable and recycled water supply systems before the initial operation of the reclaimed (recycled) water source system. During an initial or subsequent cross-connection test, the potable and reclaimed (recycled) water source system shall be isolated from each other and independently inspected and tested to ensure there is no cross-connection in accordance with Section 1503.13.2.2. Initial or subsequent inspections or tests shall be performed in accordance with Section 1503.13.2.1 through Section 1503.13.2.4. The inspection and testing shall be performed by a cross-connection control specialist certified by the California-Nevada section of the American Water Works Association or an organization with equivalent certification requirements.

- (1) Written reports of cross-connection inspections and testing shall be performed as provided in California Code of Regulations, Title 22, Section 60316.
- (2) A cross-connection test pursuant to Section 1503.13.2.2 shall be performed on the premises of a recycled water supply system when there is material reason to believe that the potable water system or recycled water supply system separation from another water supply has been compromised. A material reason to believe that the system has been compromised may be based on, but is not limited to, evidence gathered (a) during a visual inspection performed pursuant to Section 1503.13.2.1 or (b) as a result of an inspection performed following complaints of water quality or flow conditions consistent with a compromised system.

1503.13.2.1 Visual System Inspection. Prior to commencing the cross-connection testing, a dual system inspection shall be conducted by the Authority Having Jurisdiction and other authorities having jurisdiction as follows:

- (1) Meter locations of the reclaimed (recycled) water source and potable water lines shall be checked to verify that no modifications were made, and that no cross-connections are visible.
- (2) All pumps and equipment, equipment room signs, and exposed piping in equipment room shall be checked.
- (3) All valves shall be checked to ensure that the valve lock seals are still in place and intact. Valve control door signs shall be checked to verify that no signs have been removed.
- (4) If the visual inspection indicates that the reclaimed (recycled) water supply system has been modified, a cross-connection test is required.

1503.13.2.2 Cross-Connection Test. A cross-connection test shall be performed pursuant to Section 1503.13.2. The test shall be conducted in the presence of the Authority Having Jurisdiction or other authorities having jurisdiction to determine whether a cross connection has occurred as follows:

- (1) The potable water system shall be activated and pressurized. The recycled water supply system shall be shut down, depressurized, and drained.
- (2) The potable water system shall remain pressurized for a minimum period of time specified by the Authority Having Jurisdiction while the recycled water supply system is empty. The minimum period the recycled water supply system is to remain depressurized shall be determined on a case-by-case basis, taking into account the size and complexity of the potable and the recycled water supply systems, but in no case shall that period be less than 1 hour.
- (3) All fixtures, potable and reclaimed (recycled) water source, shall be tested and inspected for flow. Flow from a reclaimed (recycled) water source system outlet indicates a cross-connection. No flow from a potable water outlet shall indicate that it is connected to the recycled water supply system.
- (4) The drain on the recycled water supply system shall be checked for flow during the test and at the end of the test.
- (5) The potable water system shall then be depressurized and drained.
- (6) The recycled water supply system shall then be activated and pressurized. For the initial test, a temporary connection to a potable water supply shall be required to test the recycled water supply system plumbing. At the conclusion of the test, the temporary connection to the potable water supply shall be disconnected.
- (7) The recycled water supply system shall remain pressurized for a minimum period of time specified by the Authority Having Jurisdiction while the potable water system is empty. The minimum period the potable water system is to remain depressurized shall be determined on a case-by-case basis, but in no case shall that period be less than 1 hour.

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- (8) All fixtures, potable and reclaimed (recycled) water, shall be tested and inspected for flow. Flow from a potable water system outlet indicates a cross-connection. No flow from a recycled water supply system outlet will indicate that it is connected to the potable water system.
- (9) The drain on the potable water system shall be checked for flow during the test and at the end test.
- (10) Where there is no flow detected in the fixtures ~~which~~ that would indicate a cross-connection, the potable water system shall be repressurized.

Where shutting off the water is not practical for residential, institutional, or industrial buildings, the Authority Having Jurisdiction may authorize testing procedures other than those described above.

1503.13.2.3 Discovery of Cross-Connection. In the event that a cross-connection is discovered, the following procedure shall be activated immediately:

- (1) Notify the Authority Having Jurisdiction of the cross-connection.
- (42) The reclaimed (recycled) water piping to the building and its premises shall be shut down at the meter, and the reclaimed (recycled) water riser shall be drained.
- (23) Potable water piping to the building and its premises shall be shut down at the meter.
- (34) The cross-connection shall be uncovered and disconnected.
- (45) The building and its premises shall be retested in accordance with Section 1503.13.2.1 and Section 1503.13.2.2.
- (56) The potable water system shall be chlorinated with 50 parts-per-million (ppm) chlorine for 24 hours.
- (67) The potable water system shall be flushed after 24 hours, and a standard bacteriological test shall be performed. Where test results are acceptable, the potable water system shall be permitted to be recharged.

1503.13.2.4 Periodic Inspection. Periodic visual inspections of recycled water supply systems shall be required by the recycled water supplier or designee following the procedures in Section 1503.13.2.1. Pursuant to California Code of Regulations, Title 22 Section 60316, annual visual inspections shall be required for reclaimed (recycled) water use within buildings.

1503.14 Minimum Water Quality Requirements for Reclaimed (Recycled) Water. The minimum water quality for reclaimed (recycled) water shall meet the applicable water quality requirements of California Code of Regulations, Title 22, Division 4, Chapter 3 (commencing with Section 60301) for disinfected tertiary recycled water and the applicable reclaimed (recycled) water use. The reclaimed (recycled) water supplier shall supply water in accordance with permits issued by the State Water Resources Control Board or Regional Water Quality Control Board.

1503.15 Maintenance and Inspection. Recycled water supply systems and components shall be inspected and maintained in accordance with the manufacturer's recommendations and/or as required by the Authority Having Jurisdiction and shall comply with Section 1503.15.1.

1503.15.1 Method and Frequency. Recycled water supply systems and components shall be inspected and maintained in accordance with the manufacturer's recommendations and/or as required by the Authority Having Jurisdiction. The frequency of testing, inspection, and maintenance shall be in accordance with Table 1503.15.

TABLE 1503.15
MINIMUM ALTERNATE WATER SOURCE TESTING, INSPECTION, AND MAINTENANCE FREQUENCY

DESCRIPTION	MINIMUM FREQUENCY*
<u>Inspect and clean filters and screens, and replace (where necessary).</u>	<u>Every 3 months.</u>
<u>Inspect pumps and verify operation.</u>	<u>After initial installation and every 12 months thereafter.</u>
<u>Inspect valves and verify operation.</u>	<u>After initial installation and every 12 months thereafter.</u>
<u>Inspect pressure tanks and verify operation.</u>	<u>After initial installation and every 12 months thereafter.</u>
<u>Clear debris from and inspect storage tanks, locking devices, and verify operation.</u>	<u>After initial installation and every 12 months thereafter.</u>
<u>Inspect caution labels and marking.</u>	<u>After initial installation and every 12 months thereafter.</u>

* Note: Frequency is as described in this table, or more frequently as required by manufacturer's instructions and/or the Authority Having Jurisdiction.

1504.0 On-Site Treated Nonpotable Gray Water Systems.

1504.4 Connections to Potable or Reclaimed (Recycled) Water Supply Systems. On-site treated nonpotable gray water systems shall have no ~~unprotected~~ direct connection to a potable water supply or reclaimed (recycled) water ~~source~~ supply system.

Exceptions:

- (1) Potable or reclaimed (recycled) water is permitted to be used as makeup water for a non-pressurized nonpotable graywater storage tank provided the makeup water supply inlet is protected by an air gap; ~~reduced-pressure principle backflow preventer or other physical device which prevents backflow~~ in accordance with this code.
- (2) A potable water supply may be connected temporarily for initial testing of the on-site treated nonpotable gray water system as provided in Section 1501.11.2.2.

Authority: Water Code Section: 13557.

Reference(s): Water Code Sections: 13551, 13552.4, 13552.6, 13552.8, 13553, 13554, 13555.3. Health and Safety Code Sections: 8117, 8118.

5. DWR proposes to adopt the following section of Chapter 16 of the CCP as follows:

**CHAPTER 16
NONPOTABLE RAINWATER CATCHMENT SYSTEMS**

1602.4 Connections to Potable or Reclaimed (Recycled) Water Supply Systems. Rainwater catchment systems shall have no ~~unprotected~~ direct connection to a potable water supply or alternate water source system.

Exceptions:

- (1) Potable or reclaimed (recycled) water is permitted to be used as makeup water for a non-pressurized rainwater catchment system storage tank provided the ~~potable or makeup~~ reclaimed (recycled) water supply inlet connection is protected by an airgap ~~or reduced-pressure principle backflow preventer~~ in accordance with this code.
- (2) A potable water supply may be connected temporarily for initial testing of the rainwater catchment system.

Authority: Water Code Section: 13557.

Reference(s): Water Code Sections: 13557.

6. DWR proposes to strike Chapter 16A, Part II of the CPC to avoid conflict or duplication with the proposed adoptions to the CPC described in items 1-5 of this document.

**CHAPTER 16A
NON-POTABLE WATER REUSE SYSTEMS
Part II *[DWR]***

~~1613A.0 Recycled Water Systems – General.~~

- ~~(A) The provisions of Part II of this chapter shall apply to the installation, construction, alteration, and repair of recycled water systems intended to supply water closets, urinals, trap primers for floor drains, floor sinks and other allowed uses. The recycled water system shall not have any connections to the potable water system except via an air gap approved by the Authority Having Jurisdiction or via a temporary connection to the potable system for initial testing of the recycled water system piping.~~
- ~~(B) No permit for any recycled water system shall be issued until complete plumbing plans, with appropriate data satisfactory to the Authority Having Jurisdiction, have been submitted and approved. No changes or connections shall be made to either the recycled water system or the potable water system within any site containing a recycled water system without approval by the Authority Having Jurisdiction. See Section 1620A.0 for further details.~~
- ~~(C) Before the building is occupied, the installer shall perform an initial cross-connection test in the presence of the Authority Having Jurisdiction or other authorities having jurisdiction. The test shall be ruled successful before final approval is granted.~~
- ~~(D) A recycled water system shall be designed by a person registered or licensed to perform plumbing design work.~~

~~1614A.0 Definitions.~~

~~**Recycled Water.** Non-potable water that meets California Department of Public Health statewide uniform criteria for disinfected tertiary recycled water. Recycled water is also known as reclaimed water.~~

~~1615A.0 Permit.~~

~~It shall be unlawful for any person to construct, install, alter, or cause to be constructed, installed, or altered any recycled water system within a building or on a premises without first obtaining a permit to do such work from the Authority Having Jurisdiction. Section 13553 of the Water Code specifies structures where indoor use of recycled water is allowed. These structures include commercial, retail and office buildings, theaters, auditoriums, condominium projects, schools, hotels, apartments, barracks, dormitories, jails, prisons, reformatories, and other structures as determined by the State Department of Public Health.~~

~~1616A.0 Drawings and Specifications.~~

- ~~(A) Drawings and specifications for recycled water systems shall be in accordance with the requirements identified in Chapter 1, General Code Provisions, of the California Plumbing Code.~~
- ~~(B) The drawings and specifications shall provide sufficient detail to determine compliance with the requirements of this chapter and the California Plumbing Code.~~

~~1617A.0 Pipe Material/Pipe Identification.~~

~~Recycled water pipe shall comply with Sections 1617A.1 and 1617A.2.~~

~~**1617A.1 Pipe Materials.** Recycled water pipe, valves and fittings shall conform to the requirements of Sections 604.0, and 606.0.~~

~~**1617A.2 Color and Information.** Recycled water systems shall have a purple background with black uppercase lettering with the words "CAUTION: RECYCLED WATER, DO NOT DRINK."~~

~~All recycled water pipe shall be permanently marked to identify that it contains recycled water. This may be accomplished by labeling piping using purple-colored (Pantone color #512) adhesive Mylar PVC tape along the entire length of the pipe or using non-metallic pipe manufactured with purple integral to the material. For either material, the identification system shall be installed so the wording above is clearly visible.~~

1618A.0 Installation.

- ~~(A) The recycled water piping system shall not include any hose bibbs. Only quick couplers that differ from those used on the potable water system shall be used on the recycled water piping system.~~
- ~~(B) The recycled water system and the potable water system within the building shall be provided with the required appurtenances (valves, air/vacuum relief valves, etc.) to allow for testing as required for cross connection test in Section 1620A.0.~~
- ~~(C) Recycled water pipes laid in the same trench or crossing building sewer or drainage piping shall be installed in compliance with Sections 609.0 and 720.0 of this code. Recycled water pipes shall be protected similar to potable water pipes.~~

1619A.0 Signs.

- ~~(A) Commercial, Industrial and Institutional Room Entrance Signs.~~ All rooms in commercial, industrial, and institutional occupancies using recycled water for water closets and/or urinals shall be identified with signs. Each sign shall contain one-half ($\frac{1}{2}$) inch (12.7 mm) letters of a highly visible color on a contrasting background. The location of the sign(s) shall be such that the sign(s) shall be visible to all users. The signs shall contain the following text:

**TO CONSERVE WATER,
THIS BUILDING USES RECYCLED
WATER TO FLUSH TOILETS AND URINALS.**

- ~~(B) Equipment Room Signs.~~ Each room containing recycled water equipment shall have a sign posted with the following wording in one (1) inch (25.4 mm) letters on a purple background:

**CAUTION
RECYCLED WATER,
DO NOT DRINK.
DO NOT CONNECT TO DRINKING WATER SYSTEM.**

**NOTICE
CONTACT BUILDING MANAGEMENT
BEFORE
PERFORMING ANY WORK ON
THIS WATER SYSTEM.**

This sign shall be posted in a location that is visible to anyone working on or near recycled water equipment.

- ~~(C) Where tank type toilets (water closets) are flushed with recycled water, a permanent sign (such as plastic or stainless steel) shall be installed inside the tank to warn that the water within the tank is not a suitable emergency water supply. The sign shall be labeled:~~

RECYCLED WATER – DO NOT DRINK

- ~~(D) Valve Access Door Signs.~~ Each recycled water valve within a wall shall have its access door into the wall equipped with a warning sign approximately six (6) inches by six (6) inches (152 mm x 152 mm) with wording in one-half ($\frac{1}{2}$) inch (12.7 mm) letters on a purple background. The size, shape, and format of the sign shall be substantially the same as that specified in subsection (B) above. The signs shall be attached inside the access door frame and shall hang in the center of the access door frame. This sign requirement shall be applicable to any and all access doors, hatches, etc., leading to recycled water piping and appurtenances.

- ~~(E) Valve Seals.~~ The master recycled water shut off valve and/or the recycled water meter curb cock and each valve within a wall shall be sealed after the recycled water system has been approved and placed into operation. These seals shall be either crimped lead wire seal or plastic break away seal which, if broken after system approval, shall be deemed conclusive evidence that the recycled water system has been accessed. The seals shall be purple, numbered, and contain the words "RECYCLED WATER", and shall be supplied by the recycled water purveyor, or by other arrangements acceptable to the Authority Having Jurisdiction.

1620A.0 Inspection and Testing.

~~(A) Recycled water piping shall be inspected and tested as outlined in this code for testing of potable water piping.~~

~~(B) The recycled water system shall be inspected and tested in accordance to the following: (a) an initial cross-connection test before the initial operation of the recycled water system; (b) an annual visual system inspection; (c) a cross-connection test as required pursuant to Section 60316(a), Title 22, California Code of Regulations; (d) a cross-connection test when there is material reason to believe that the potable water and/or recycled water system separation has been compromised; and (e) a cross-connection test following remediation of a discovered cross-connection. A material reason to believe that the system has been compromised may be based on, but is not limited to, evidence gathered: (a) during a visual inspection performed pursuant to Section 1620A.0, or (b) as a result of an inspection performed following complaints of water quality or flow conditions consistent with a compromised system.~~

~~An initial Cross-Connection test and subsequent Annual Visual System Inspection shall be performed as follows:~~

~~(1) Annual Visual System Inspection. A visual system inspection shall be conducted annually by the Authority Having Jurisdiction or other authorities having jurisdiction.~~

- ~~(i) Meter locations of the recycled water and potable water lines shall be checked to verify that no modifications were made, and that no cross-connections are visible.~~
- ~~(ii) All pumps and equipment, equipment room signs, and exposed piping in the equipment room shall be checked.~~
- ~~(iii) All valves shall be checked to ensure that valve lock seals are still in place and intact. All valve control door signs shall be checked to verify that no signs have been removed.~~
- ~~(iv) If the visual inspection indicates that the recycled water plumbing has been modified, a Cross-Connection Test is required.~~

~~(2) Cross-Connection Test. The applicant shall perform the Cross-Connection Test as required pursuant to the first paragraph in Section 1620A.0(B).~~

~~The test shall be conducted in the presence of the Authority Having Jurisdiction or other authorities having jurisdiction to determine whether a cross-connection occurred.~~

~~Alternate inspection and testing requirements may be allowed by the Authority Having Jurisdiction for residential, institutional or industrial buildings where shutting off the water is not practical. The recycled water purveyor or other designated appointee may substitute for the Authority Having Jurisdiction in the above mentioned inspection and tests.~~

- ~~(i) The potable water system shall be activated and pressurized. The recycled water system shall be shut down and completely depressurized.~~
- ~~(ii) The potable water system shall remain pressurized while the recycled water system is depressurized. The minimum period the recycled water system is to remain depressurized shall be determined on a case-by-case basis, taking into account the size and complexity of the potable and recycled water distribution systems.~~
- ~~(iii) All fixtures, potable and recycled, shall be tested and inspected for flow. Flow from any recycled water system outlet shall indicate a cross-connection. No flow from a potable water outlet would indicate that it may be connected to the recycled water system.~~
- ~~(iv) The drain on the recycled water system shall be checked for flow during the test and at the end of the period.~~
- ~~(v) The potable water system shall then be completely depressurized.~~
- ~~(vi) The recycled water system shall then be activated and pressurized. For the initial test, a temporary connection to a potable water supply will be required to test the recycled water system plumbing. At the conclusion of the test, the temporary connection to the potable water supply shall be disconnected.~~
- ~~(vii) The recycled water system shall remain pressurized while the potable water system is depressurized. The minimum period the potable water system is to remain depressurized shall be determined on a case-by-case basis.~~
- ~~(viii) All fixtures, potable and recycled, shall be tested and inspected for flow. Flow from any potable water system outlet shall indicate a cross-connection. No flow from a recycled water outlet would indicate that it is connected to the potable water system.~~
- ~~(ix) The drain on the potable water system shall be checked for flow during the test and at the end of the period.~~

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~~(x) If there is no flow detected in any of the fixtures that would have indicated a cross-connection, the potable water system shall be repressurized.~~

~~(3) **Cross-Connection Discovered.** In the event that a cross-connection is discovered, the following procedure shall be activated immediately:~~

~~(i) Recycled water piping to the building shall be shut down at the meter, and the recycled water riser shall be drained.~~

~~(ii) Potable water piping to the building shall be shut down at the meter.~~

~~(iii) The cross-connection shall be uncovered and disconnected.~~

~~(iv) The building shall be retested following procedures listed in Sections 1620A.0 (B)(1) and (B)(2) above.~~

~~(v) The potable water system shall be chlorinated with fifty (50) ppm chlorine for twenty-four (24) hours.~~

~~(vi) The potable water system shall be flushed after twenty-four (24) hours, and a standard bacteriological test shall be performed. If test results are acceptable, the potable water system shall be permitted to be recharged.~~

~~Alternate testing requirements shall be permitted by the Authority Having Jurisdiction.~~

1621A.0 Sizing.

~~Recycled water piping shall be sized as outlined in this code for sizing potable water piping.~~

Authority: Water Code Section: 13557.

Reference(s): Water Code Section: 13557.